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## Canadian Aquatic Invasive Species Network

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### Challenge



It is well known that aquatic invasive species (AIS) pose a substantial threat to Canada's vast aquatic ecosystems. The difficulties for preservation appear in early detection of new incursions and rapid response once a presence is detected. Working in conjunction with industrial partners, primarily shipping companies and government agencies, CAISN II is developing innovative early detection technology and rapid response capabilities will help preserve marine and freshwater habitats. Particular attention is being paid to Canada's Arctic Ocean where increased shipping, in part due to climate change, has put it at greater risk than ever before.

In addition, CAISN II is informing government agencies about the uncertainty of possible impacts and control options for new AIS and addressing how the introduction of AIS interacts with other disruptors of ecosystem function.

### Network Structure

Bringing together 28 researchers from 11 universities and six federal laboratories, CAISN is a veritable "who's who" from the world of invasion ecology, biology, taxonomy and mathematics, administered by a carefully selected scientific committee. A board of directors ensures that all of CAISN's partners and stakeholders are represented.

Like its namesake, CAISN: 2006-11, CAISN II brings together the various skills and interests of academia, government, non-government entities and industry with a shared goal of assisting those affected, while advancing invasion science and technology. Furthermore, CAISN II is training the next generation of AIS experts who strive to leave their imprint in the field.

### Research Objectives

With guidance from the CAISN II Scientific Committee, world-renowned lake and marine ecologists, modellers, mathematicians and statisticians will explore the unknown under the following research themes:

#### Early Detection

Using state-of-the-art techniques, CAISN II will be addressing the need for post-incursion detection of AIS.

#### Rapid Response

Following early detection, CAISN II researchers are exploring current rapid response capabilities and developing new programs, policy and decision support programs.

#### Aquatic Invasive Species As Part of Multiple Stressors

Multiple stressors affect aquatic ecosystems, though their interactions with AIS are not known. CAISN II will explore key stressors, such as climate change, and their interactions in lake, river and coastal marine ecosystems.

## Reducing Uncertainty And Prediction In Management

In an effort to prioritize management strategies, CAISN II is developing predictive models that will more accurately determine which AIS are likely to become established and disruptive across Canada.

### Outcomes

- CAISN II will be the scientific lead that will influence the implementation of government policy, ensuring the early detection and rapid response to AIS in Canada's aquatic ecosystems.
- The network will provide the science-based state-of-the-art technology needed results to reduce new invasions in Canada's marine and freshwater ecosystems, while minimizing their impact.
- Through existing and new partnerships, the network will contribute to Canada's environmental outreach programs and will communicate results to the public.
- CAISN II's research will increase the visibility of Canada's collaborative efforts to address and resolve AIS issues. The coordinated approach, and impact of, the network's studies will be recognized as leading edge—both nationally and internationally.

### Contact

Dr. Hugh MacIsaac  
Tel.: 519-253-3000, ext. 3754  
E-mail: [hughm@uwindsor.ca](mailto:hughm@uwindsor.ca)  
Web site: [www.caisn.ca](http://www.caisn.ca)

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